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Abstract - The Paris Climate Agreement has set the long-term vision for the management of Green House Gases (GHG). For the LNG industry, it means a significant reduction in carbon footprint. The electrical power generation for LNG plant typically has a spinning reserve philosophy of “N+1” Gas Turbine Generators (GTGs). An abatement opportunity is the replacement of part-load GTGs with a Battery Energy Storage System (BESS), allowing the plant to turn off the operating spare power generation unit and operate as (N+BESS). By doing this, the remaining units will operate at higher load and consequently at a higher efficiency.

This paper examines the technical aspects of deploying a large BESS, based on Li-ion batteries, into onshore LNG plants. For an example feed gas constrained plant, the benefits are:

1. GHG and NOx reduction
2. GTG running hours reduction
3. LNG production increase
4. Improved power quality and faster dynamic response

The aspects addressed in the paper are:

1. Will it work? The functionality of the BESS to stabilize the electrical system in case of a trip of the running GTG
2. Is it safe? The safety aspects of a large-scale BESS installed on an operating LNG plant